

CLAIMS

1. A trocar having access and being adapted to provide access for a
5 surgical instrument across a body wall and into a body cavity, comprising:

a cannula disposed along the axis and having a proximal
end and a distal end, the cannula being adapted for disposition across the body
wall;

10 a housing disposed along the axis at the proximal end of the
cannula, the housing having a housing wall adapted to receive the surgical
instrument generally along the axis and to introduce the surgical instrument into
the cannula;

15 a valve disposed in the housing and having properties for
forming a first seal with the housing wall and a second seal with the surgical
instrument when the surgical instrument is present in the trocar and a third seal
when the surgical instrument is absent from the trocar;

a gel material inserted in the valve and having floating
properties for maintaining the second seal even when the surgical instrument is
moved laterally of the axis of the trocar.

2. The trocar recited in Claim 1 wherein the gel material of the
valve has a maximum outer dimension measured laterally of the axis and a
thickness measured along the axis, the ratio of the maximum outer dimensions to
the thickness being in a range between one and five.

3. The trocar recited in Claim 2, wherein the thickness is in a range between about five to ten millimeters.

4. The trocar recited in Claim 1, further comprising:
means defining at least one cavity adjacent the gel material,
the cavity providing a void into which the gel material can move.

5. The trocar recited in Claim 4, wherein the cavity defining means includes a portion of the housing wall.

6. The trocar recited in Claim 4, wherein the cavity defining means includes a portion of the gel material.

7. A trocar having an axis and being adapted to provide access for a surgical instrument across a body wall and into a body cavity, comprising:

5 a cannula disposed along the axis and having a proximal end and a distal end, the cannula being adapted for disposition across the body wall;

a housing disposed along the axis at the proximal end of the cannula, the housing having a housing wall adapted to receive the surgical
10 instrument generally along the axis and to introduce the surgical instrument into the cannula;

a septum valve disposed in the valve housing and adapted to form a first seal with the instrument when the instrument is received into the trocar;

a valve support disposed between the septum valve and the
15 housing to float the septum valve relative to the housing, the valve support including a gel material having elongation greater than 1000 percent to facilitate maintenance of the first seal during off-axis movement of the instrument relative to the housing.

8. The trocar recited in Claim 7, wherein the valve support forms a second seal with the housing wall.

9. The trocar recited in Claim 8, wherein the housing includes:
a first wall disposed generally parallel to the axis of the
trocar; and
a second wall disposed generally perpendicular to the axis of
the trocar.

10. The trocar recited in Claim 9, wherein the valve support
forms the second seal with the first walls of the housing.

11. The trocar recited in Claim 9, wherein the valve support
forms the second seal with the second walls of the housing.

12. The trocar recited in Claim 7, wherein the septum valve is
insert molded to the valve support.

13. A trocar having an axis and being adapted to provide access for a surgical instrument across a body wall and into a body cavity, comprising:

5 a cannula having a tubular configuration and extending between a proximal end and a distal end;

a valve housing disposed at the proximal end of the cannula;

a valve disposed in the valve housing along the axis, the valve being adapted to form a seal with the instrument when the instrument is

10 inserted through the valve housing and into the cannula; and

portions of the valve including a gel material having properties for moving relative to the axis to maintain the seal with the instrument when the instrument is moved off of the axis.

14. The trocar recited in Claim 13, wherein the properties of the gel material include an elongation of 1000 percent.

15. The trocar recited in Claim 13, further comprising:
means defining a void in proximity to the gel material to facilitate movement of the gel material relative to the axis.

16. The trocar recited in Claim 15, wherein the void defining means includes portions of the seal housing.

17. The trocar recited in Claim 15, wherein the void defining means includes portions of the gel material in the form of air pockets within the gel material.

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